found, for example, at page 21, lines 4-5 of the specification. The concentration range of amended claim 1 is supported, for example, by originally-filed claim 5. No new matter has been added.

Claims 1-29, 41-51 and 54-64 are pending.

The telephonic interview with the Examiner of May 21, 2002, with the undersigned is acknowledged with appreciation. Claim 1 has been amended above as discussed with the Examiner. Withdrawal of the Section 112, first paragraph, rejection of claim 1 is requested.

The Section 112, second paragraph, rejection of claim 1-16 and 45 is obviated by the above and withdrawal of the rejection is requested.

The Section 102 rejection of claims 1-6, 10-25, 29-46 and 49-53 over U.S. 2001/0034435 should be withdrawn as the present application was filed prior to November 29, 2000 and U.S. patent application publications are not citable against such applications. See, for example, Federal Register, Vol. 65, No. 183, September 20, 2000, page 5725, middle column, last paragraph, copy attached.

The Section 103 rejection of claims 1-25, 29-46 and 49-53 over US 2001/0034435 and El Rassi (Chromatography of Peptides and Proteins, pages 447-494) should be withdrawn as the U.S. patent application publication is not citable against the present application. The Section 103 rejection of claims 1-53 over US 2001/0034435A1 in view of El Rassi and Ishida (Kagaku Kogaku Roudunshu Vol. 17 (3): 589-594 (1991)) should be withdrawn as the U.S. patent application publication is not citable against the present application.

While not citable against the present application, the applicant notes that the pending claims are patentable over the teachings of Nochumson and consideration of the following in this regard is requested.

Initially, the applicant submits that the present specification is believed to be the first to teach and demonstrate the use of hydrophobic interaction media (i.e., HIC) to purify plasmid DNA without requiring prior purification with, for example, an anion exchange resin. Nochumson uses anion exchange resins to provide "high plasmid DNA binding ...[and] efficient removal of proteins, RNA, low molecular weight molecules and probably some chromosomal DNA and some open circle DNA." See, ¶¶ 0022, 0030, 0031, 0051, 0070, 0071, 0072, 0077, 0078, (Figures 2 and 3), 0094, and 0096 of Nochumson. Nochumson further indicates that use of "HIC resins in conjunction with anionic-exchange resins offer the ability at large scale to remove a substantial amount of contaminants which copurify with the plasmid DNA on ion-exchange resins." See, ¶0100 of Nochumson.

More importantly, the presently claimed invention involves, in claims 1-16, formation of a solution of a mixture of plasmid DNA with a salt concentration of about 2M to 4M to purify plasmid DNA as an unbound fraction from a HIC resin interaction. One of ordinary skill in the art reviewing Nochumson would not have made such a method as Nochumson states in ¶0100 that "most HIC resins will bind supercoiled DNA at 32M $(NH_4)_2SO_4$ while the open circle form will not bind under these conditions. This allows for a significant enrichment of the supercoiled plasmid DNA in the final product." Accordingly, contrary to the teachings of Nochumson, the method of claims 1-16 of the

present application provides for the use of HIC to separate unbound plasmid DNA at salt concentrations wherein Nochumson teaches plasmid DNA should bind HIC. As for the methods of claims 17-29, 41-51 and 54-64, of the present application, the applicant notes that Nochumson uses HIC to bind "residual RNA, endotoxins, and *E. coli* DNA" and describes as how "plasmid [DNA] flows through" in the presence of ~1.6 M ammonium sulfate. Alternatively, HIC is used by Nochumson in the presence of ~2.0 M ammonium sulfate which "allows relaxed and/or nicked circular plasmid to flow through, while the supercoiled plasmid binds; the supercoiled can then be eluted with #1.6M ammonium sulfate." See, ¶0078 of Nochumson. Nochumson does not teach or suggest a metod, such as is presently claimed, wherein a mixture of supercoiled plasmid DNA and relaxed plasmid DNA are contacted with a hydrophobic interaction media under conditions where both the supercoiled plasmid DNA and the relaxed plasmid DNA bind to the hydrophobic interaction media.

The presently claimed invention is patentable over the whole of the disclosure of Nochumson, including the published claims of the same.

The Examiner is requested to contact the undersigned in the event anything further is required in this regard.

Further copies of the references which the Examiner has lined-through in the PTO-1449 Form returned with Paper No. 10 are attached along with a further PTO-1449 Form listing these documents - which are admittedly only titles and authors, and a copy of the undersigned's postcard receipt from the January 2, 2002, original filing of these documents as evidence of receipt of the same in the Patent Office. Return of an

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initialed copy of the attached PTO-1449 Form, pursuant to MPEP §609, is requested acknowledging consideration of the attachment.

The claims are submitted to be in condition for allowance and a Notice to that effect is requested. The Examiner is requested to contact the undersigned if anything further is required in this regard.

Respectfully submitted,

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By: _____

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MARKED UP COPY OF AMENDED CLAIMS

1. (Twice Amended) A method for purifying plasmid DNA from a mixture of same containing at least one host cell impurity comprising the following steps:

(a) forming a solution [by adding sufficient salt to] with said mixture wherein said solution has a salt concentration in the range of about 2M to 4M to allow selective binding of said at least one host cell impurity to a hydrophobic interaction media;

(b) contacting said solution containing plasmid DNA with said hydrophobic interaction media under conditions that said at least one impurity binds to the hydrophobic interaction media to form a complex; and

(c) collecting unbound plasmid DNA from said complex;

wherein said method is conducted in the absence of [non-aqueous] organic solvents, detergents, glycols, hexamine cobalt, spermidine, and polyvinylpyrollidone.

5. (Twice Amended) The method of claim 4 wherein the salt is ammonium sulfate [in a concentration range of about 2M to 4M].

15. (Amended) The method of claim [14] 12 wherein the media is at least one of a methyacrylate ethylene glycol copolymer backbone or a cross-linked agarose backbone.

45. (Amended) The method of claim [44] 41 wherein said resin is at least one of a methacrylate and ethylene glycol copolymer backbone or a cross-linked agarose.

46. (Twice Amended) The method of claim 41 wherein said support is in the form of beads ranging in size from 1[3]5 to 100 μm.